CW#61: Ratios & Proportions

Geometry

Due: Monday, Jan 4th

**Classroom Copy- DO NOT WRITE ON!**

You will be able to set up a proportion and solve.

A ratio \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ two quantities. (Ex, three black squares to one white square: ■■■□. )

Can be written three ways:



**Notes from Algebra… how much do you remember?**

Proportion: equation that states that 2 \_\_\_\_\_\_\_\_\_\_ are \_\_\_\_\_\_\_\_\_\_\_\_\_.

**Step 1:** Set up 2 \_\_\_\_\_\_\_\_\_\_\_\_.

**Step 2:** \_\_\_\_\_\_\_\_- multiply.

**Step 3:** Put \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ around each term in the cross-product.

**Step 4:** Solve!

**Ex**: 3 is to 8 as x is to 32 🡪

**I. Just checking…**

Ex 1: Simplify:

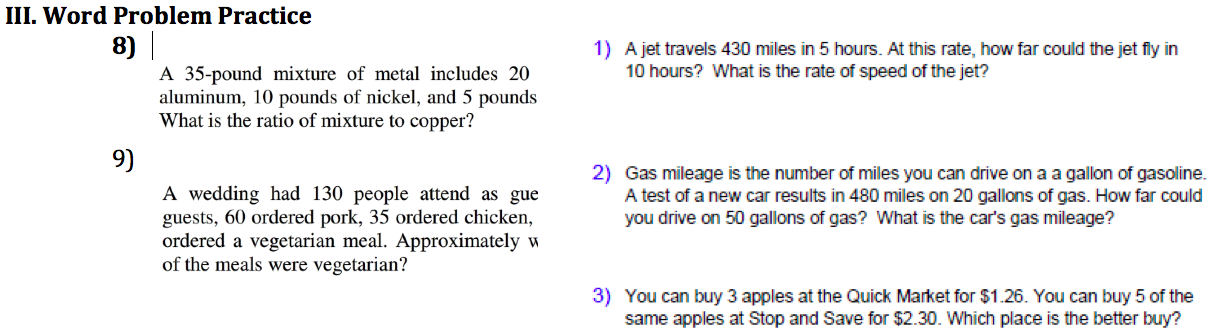
Ex 2: Simplify:

**II. Ratios in Daily Life**

1. 65 MPH
2. Call cost per minute
3. 1 in 28,000,000 chance of winning the lottery
4. 4 staff members for every 45 students
5. 2.2 pounds are equivalent to 1 kilogram
6. Shoe size proportional to height
7. Percentages

***So…***

1. If Mr. B travels 65 miles per hour, how long will it take him to reach Green Bay, 211 miles from Chicago?
2. If a call to Mexico costs 1.5 cents per minute, how many minutes of talk will a $5 allow?
3. If I buy 20 lottery tickets, what are my chances of winning?
4. If Muchin has 900 students, how many staff members does it have?
5. How much would a 145 lb person weigh using the metric system?
6. Allie’s foot is 21 cm long, and her mother’s is 24 cm long. If Allie’s mom is 152 cm tall and Allie is 133 cm tall, who has the bigger foot proportionally?
7. Muchin’s 10th grade class has 101 boys and 117 girls. What is the ratio of boys to girls? What is the ratio of girls to the entire class? What percentage of the class is girls?



**IV. Application to Geometry**

1. One of the most common ratios used in geometry is slope . If a line passes through the origin and has a slope , find the missing variable in the following points on the line: (2, a) (b, 6) (6, c) (12, d). **a3, b4, c9, d18**
2. An isosceles triangle has a ratio of interior angles of 3:6. Draw and label the triangle.
   1. What are the values of all angles if the base angles are smaller than the vertex angles? (Check your work – what should be the sum of the interior angles of the triangle?) **base 45, vertex 90**
   2. What are the values of all angles if the base angles are larger than the vertex angles? **b 72**

**, v 36**

1. If the ratio of the perimeter of a square to its area is 1:2, what is the side length of the square? **Side**

**Use ratios to solve the problems below. Show your work. Round to the nearest hundredth if needed.**



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| 8) | 9) |